



COMMUNICATIONS



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Psychology of Image



Perceptron Image

Image: Hypothesis Development.

This is the only image used to do the processes of research in psychology. This is the prediction regarding the results of image research study.

The main hypothesis for this study is based on the results of related studies in visual graphics. Inductive reasoning is used in researching a question of interest. Thus is the use of specific image information, *perceptron* to make a more general prediction.

The theory-driven hypothesis is based on visual short-term memory of shapes comprising filled colours of trapezium, rectangle, and unfilled rectangle, and less-than symbol, and slanted rectangle.

Internal validity is the degree to which a study provides a good test of a causal hypothesis. The degree of *perceptron* has about 62 images to based on systematic observation and this provides about 62% good test score for causal hypothesis.

The degree to which the results of the causal study can be replicated under similar conditions is low based on systematic observation. It is about 38% and quite reliable.

Systematic Observation

Concept Definition

It is the collection of systematic behaviours in controlled tasks. Behaviour is artificial and realism is lower. It has more control over the factors in a study and increase internal validity.

It has a cognitive behaviour in nature. Tasks are presented and completed on a computer to maximise accuracy.

Operational Definition

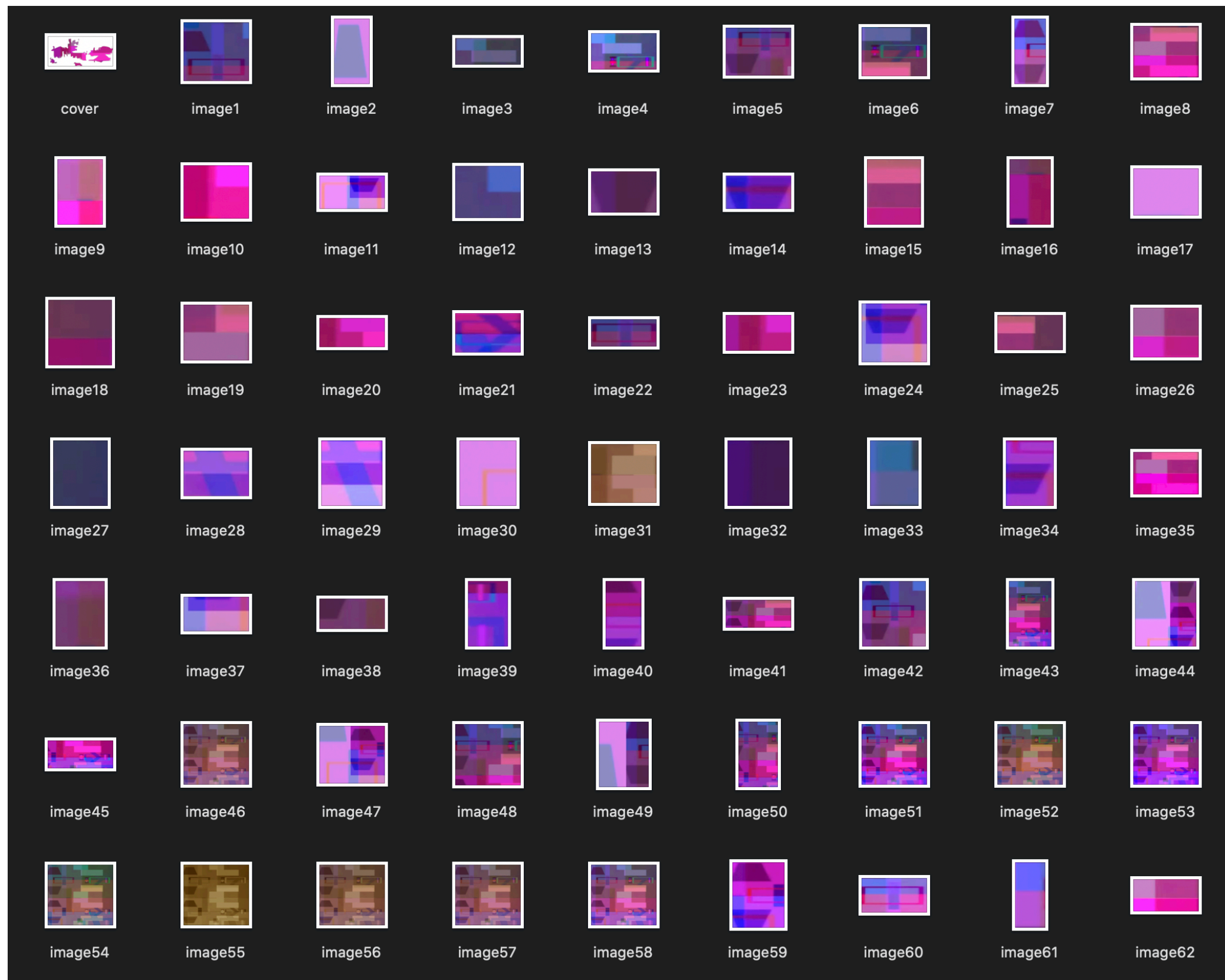
Abstract Concept

An abstract computer is used to do the manipulation of image by an editing tool. The manipulation concept is by rectangular selection and crop observation technique. This gives the measure of an abstract concept and makes it concrete for the purpose of research study. Other manipulation concept is elliptical selection.

Research Design

The variable used in the research design is numeric in nature and it is categorical so as to group individuals into different categories that can be compared. The behaviour of interest in the study is about 7 variables that is of primary interest in the research. Observation in the study constitute a stimuli response variable.

EXPERIMENT

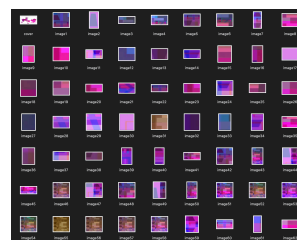


The group of participant images in an *experiment* that experience selection level of the independent variables. The *experimental group* is the selected group and the unselected group is the *control group*.



CASE STUDY

A case study is performed to gain information about artificial behaviour that is different and it is not exhibited by an individual. A case study of a group cannot be generalised to all individual.

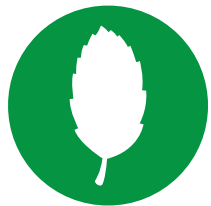


Causal Study

Stripe Groups



Stripe 1



Stripe 2



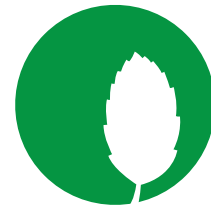
Stripe 3



Stripe 4



Stripe 5



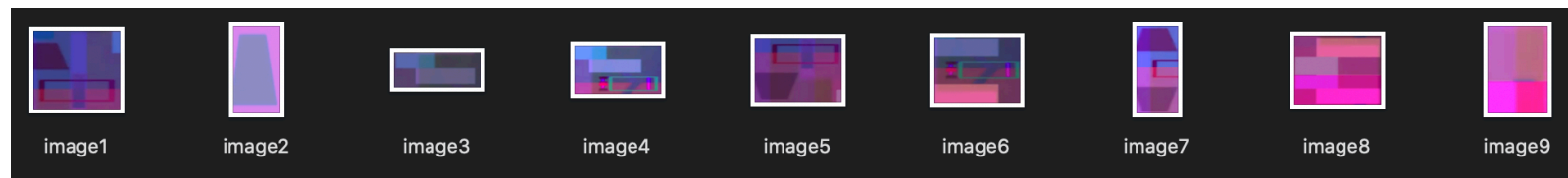
Stripe 6



Stripe 7



Stripe 1



There are about 9 participant images in this experimental group with its variable, 1. The case-level of participation images is from 1 to 9. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 1

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are truncated trapezium, and rectangles (8) . It has 9 colours in total of selected shapes in the image. It has one unfilled rectangle with red colour borders.

CASE 2: STRIPE 1

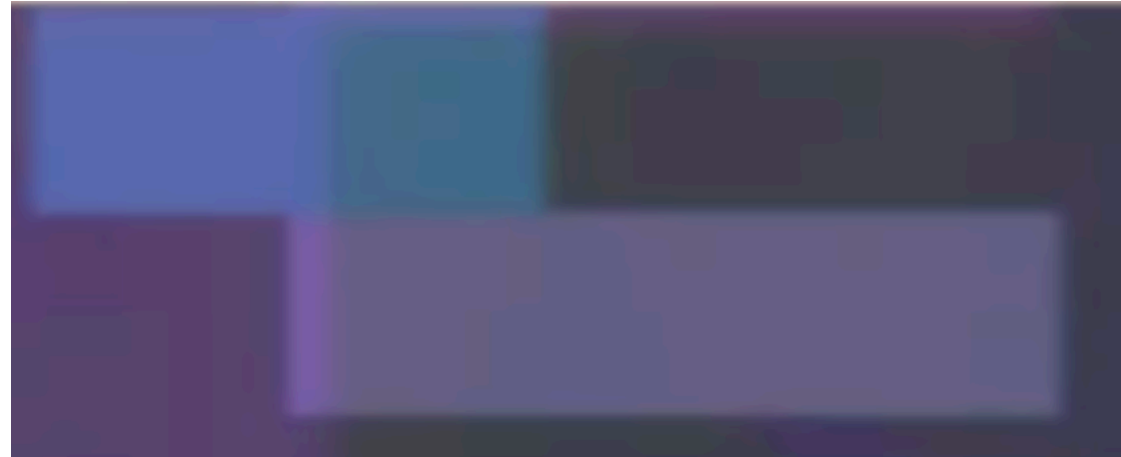
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is slanted trapezium. It has 2 colours in total of selected shape and background colour of the image.

CASE 3: STRIPE 1

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (5) . It has 9 colours in total of selected shapes and background in the image. All rectangles are filled.

CASE 4: STRIPE 1

PARTICIPANT IMAGE



The behaviour is artificial in nature and the shape that comprise the image is rectangle (16) . It has 16 colours in total of selected shape in the image. It has one unfilled rectangle with green colour borders and slanted rectangle with violet.

CASE 5: STRIPE 1

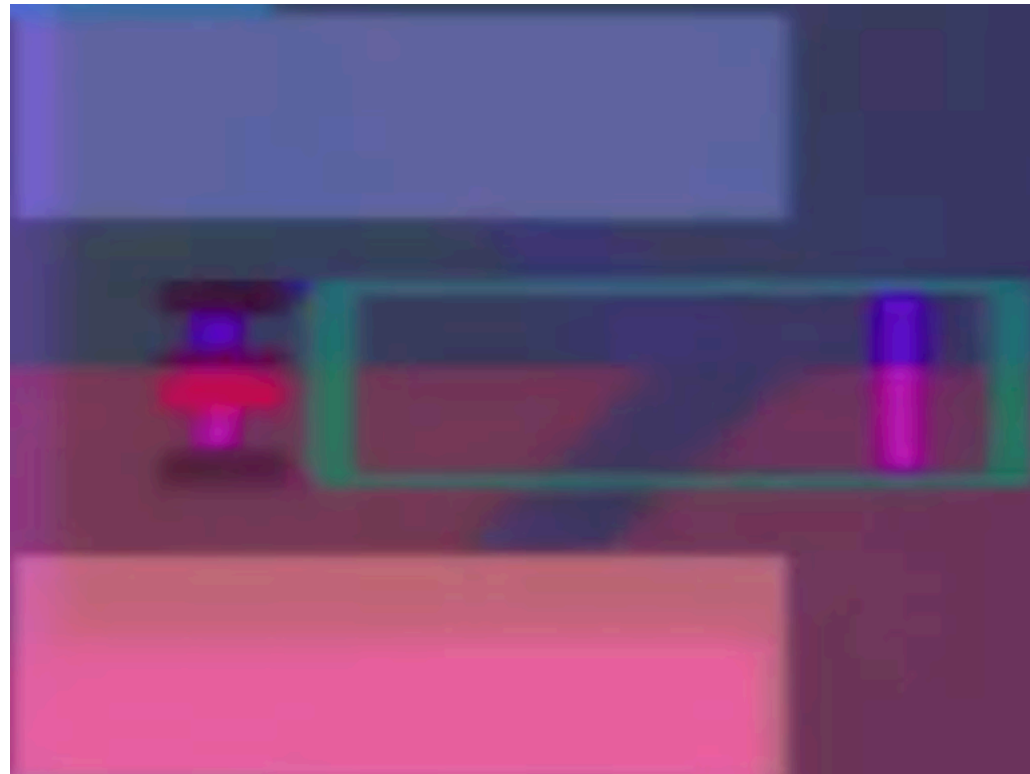
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are trapezium, and rectangles (11) . It has 10 colours in total of selected shapes in the image. It has one unfilled rectangle with red colour borders.

CASE 6: STRIPE 1

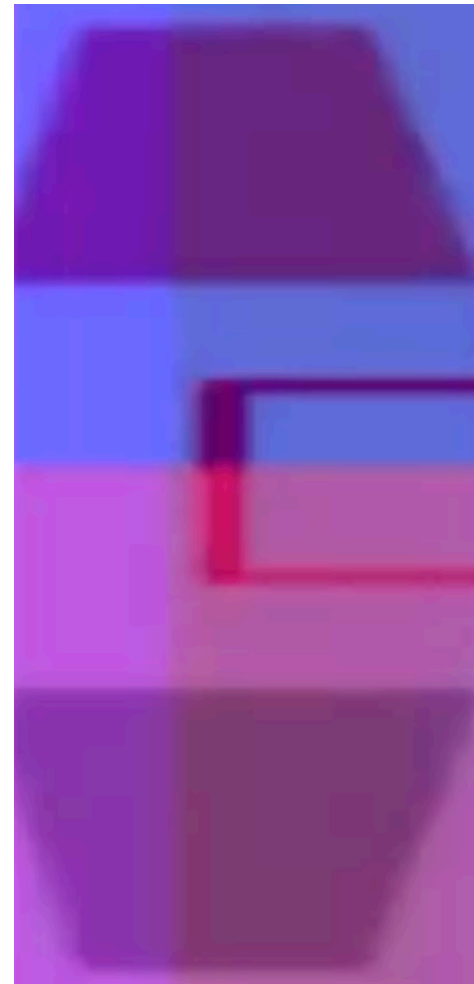
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (14) . It has 14 colours in total of selected shape in the image. It has one unfilled rectangle with green colour border and slanted rectangle.

CASE 7: STRIPE 1

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are trapezium(2), and rectangles (5) . It has 7 colours in total of selected shapes in the image. It has one unfilled rectangle with red colour borders and a colour effect.

CASE 8: STRIPE 1

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangles (8) . It has 9 colours in total of selected shapes in the image.

CASE 9: STRIPE 1

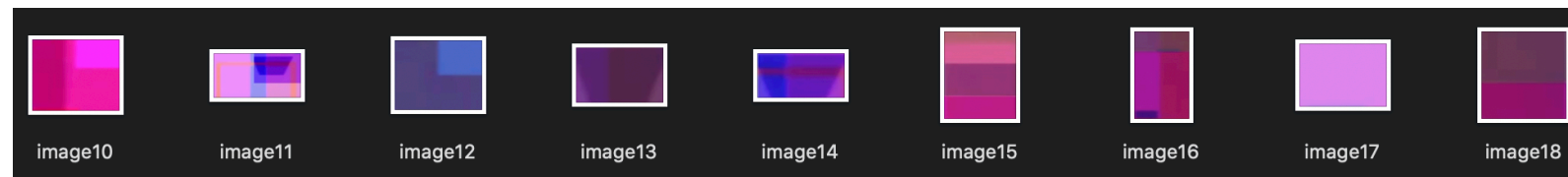
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is a rectangle (4). It has 5 colours in total of selected shape and background colour in the image.



Stripe 2



There are about 9 participant images in this experimental group with its variable, 2. The case-level of participation images is from 10 to 18. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 2

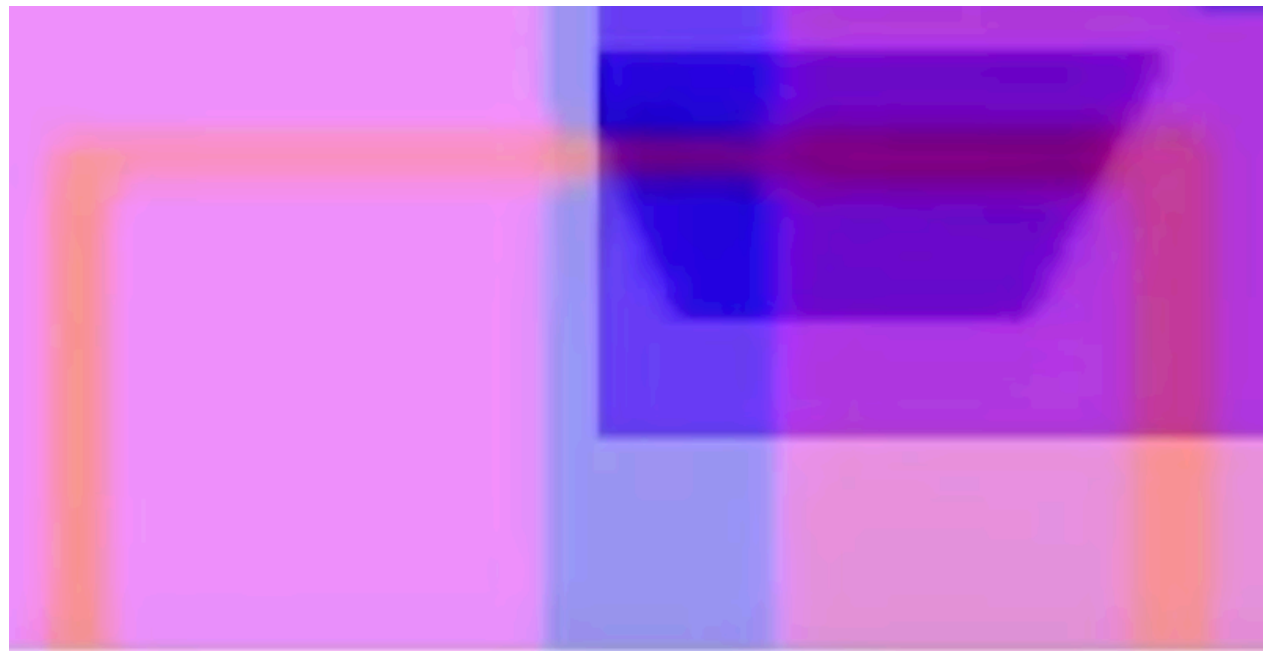
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (3) . It has 3 colours in total of selected shape in the image.

CASE 2: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are trapezium and rectangles (3) . It has 4 colours in total of selected shapes in the image. It has one unfilled rectangle with yellow colour borders.

CASE 3: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (1) . It has 2 colours in total of selected shape in the image.

CASE 4: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is truncated trapezium. It has 2 colours in total of selected shape in the image.

CASE 5: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is truncated trapezium, and line . It has 4 colours in total of selected shapes in the image.

CASE 6: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle(3) . It has 3 colours in total of selected shape in the image.

CASE 7: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (5) . It has 5 colours in total of selected shape in the image.

CASE 8: STRIPE 2

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (1) . It has 1 colour in total of selected shape in the image which is pink.

CASE 9: STRIPE 2

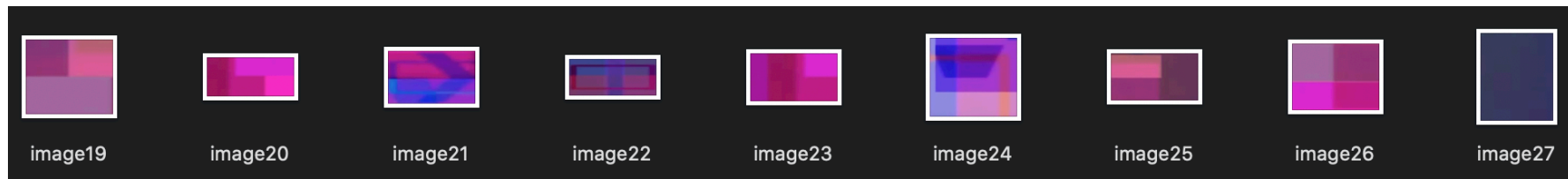
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle(2) . It has 2 colours in total of selected shape in the image.



Stripe 3



There are about 9 participant images in this experimental group with its variable, 3. The case-level of participation images is from 19 to 27. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 3

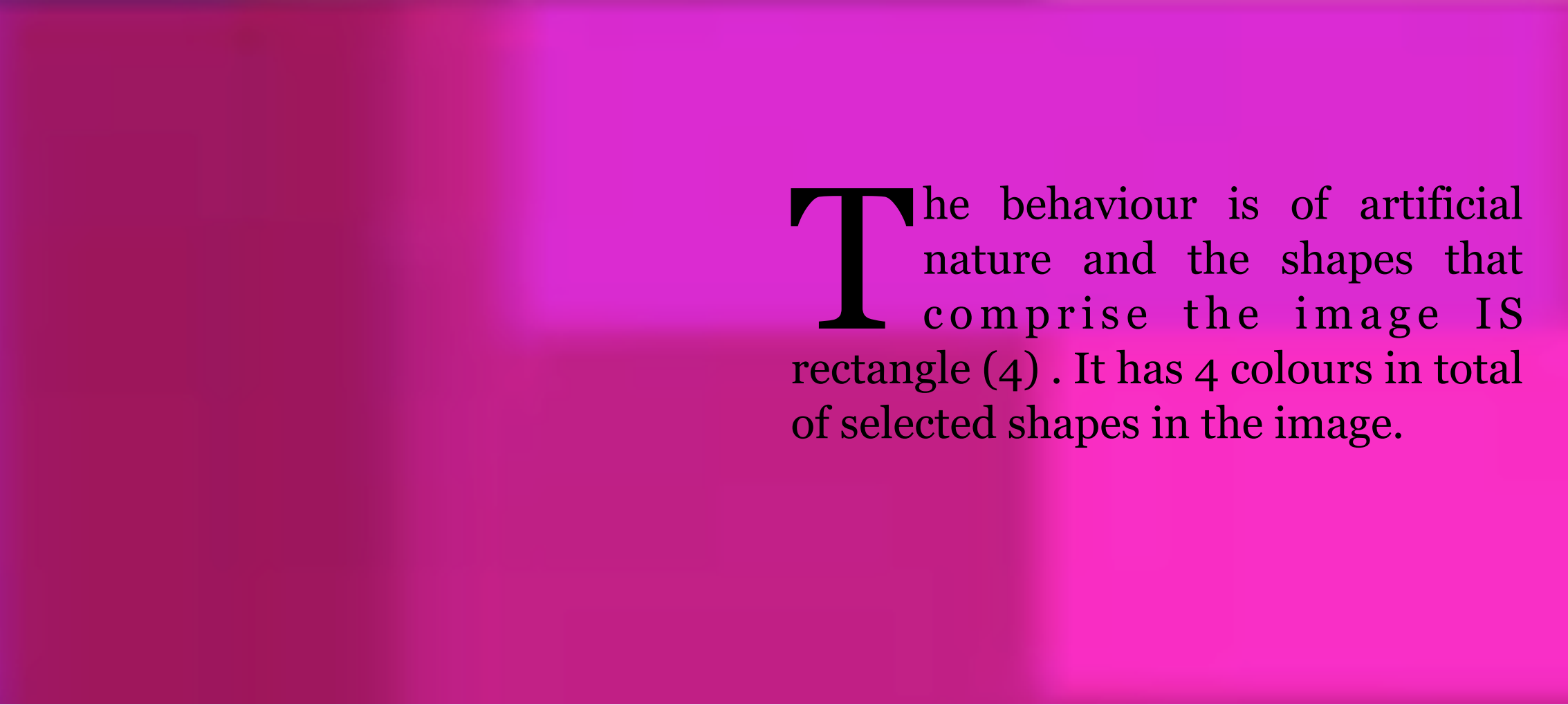
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image is rectangle (4) . It has 4 colours in total of selected shape in the image.

CASE 2: STRIPE 3

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image IS rectangle (4) . It has 4 colours in total of selected shapes in the image.

CASE 3: STRIPE 3

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are greater-than symbol, unfilled rectangle (1) and slanted rectangle. It has 4 colours in total of selected shapes in the image.

CASE 4: STRIPE 3

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (5) . It has 5 colours in total of selected shape in the image.

CASE 5: STRIPE 3

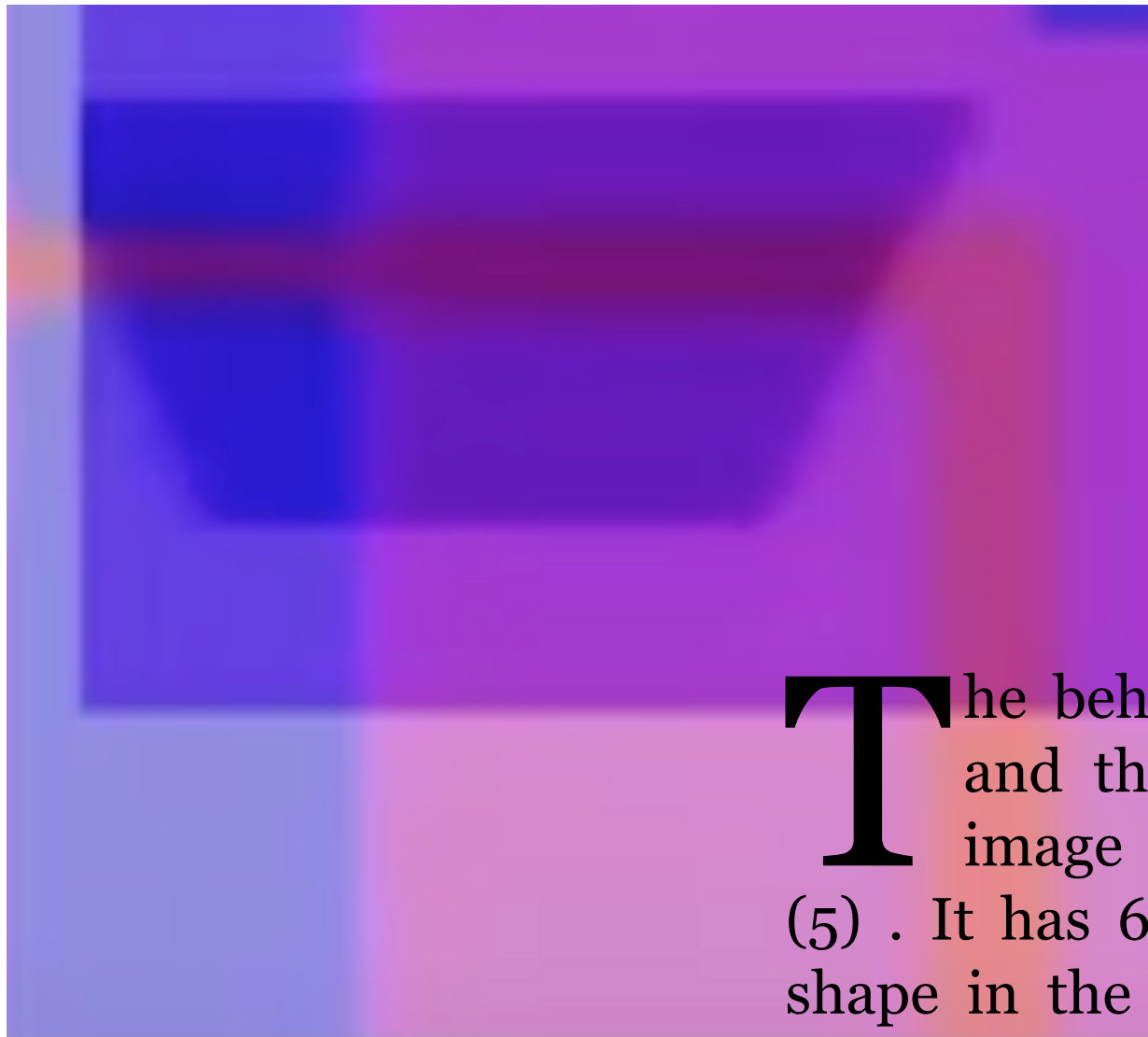
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (4) . It has 4 colours in total of selected shape in the image.

CASE 6: STRIPE 3

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are trapezium and rectangle (5) . It has 6 colours in total of selected shape in the image. There is an unfilled rectangle of brown colour.

CASE 7: STRIPE 3

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is a rectangle (4) . It has 4 colours in total of selected shape in the image.

CASE 8: STRIPE 3

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle (4) . It has 4 colours in total of selected shape in the image.

CASE 9: STRIPE 3

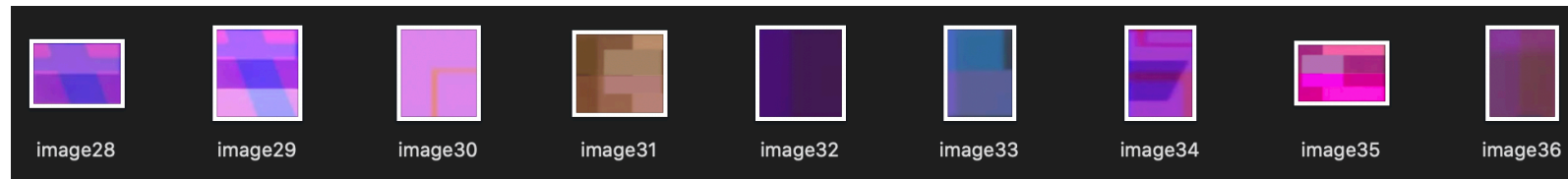
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is rectangle (1) . It has 1 colour in total of selected shape in the image.



Stripe 4



There are about 9 participant images in this experimental group with its variable, 4. The case-level of participation images is from 28 to 36. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 4

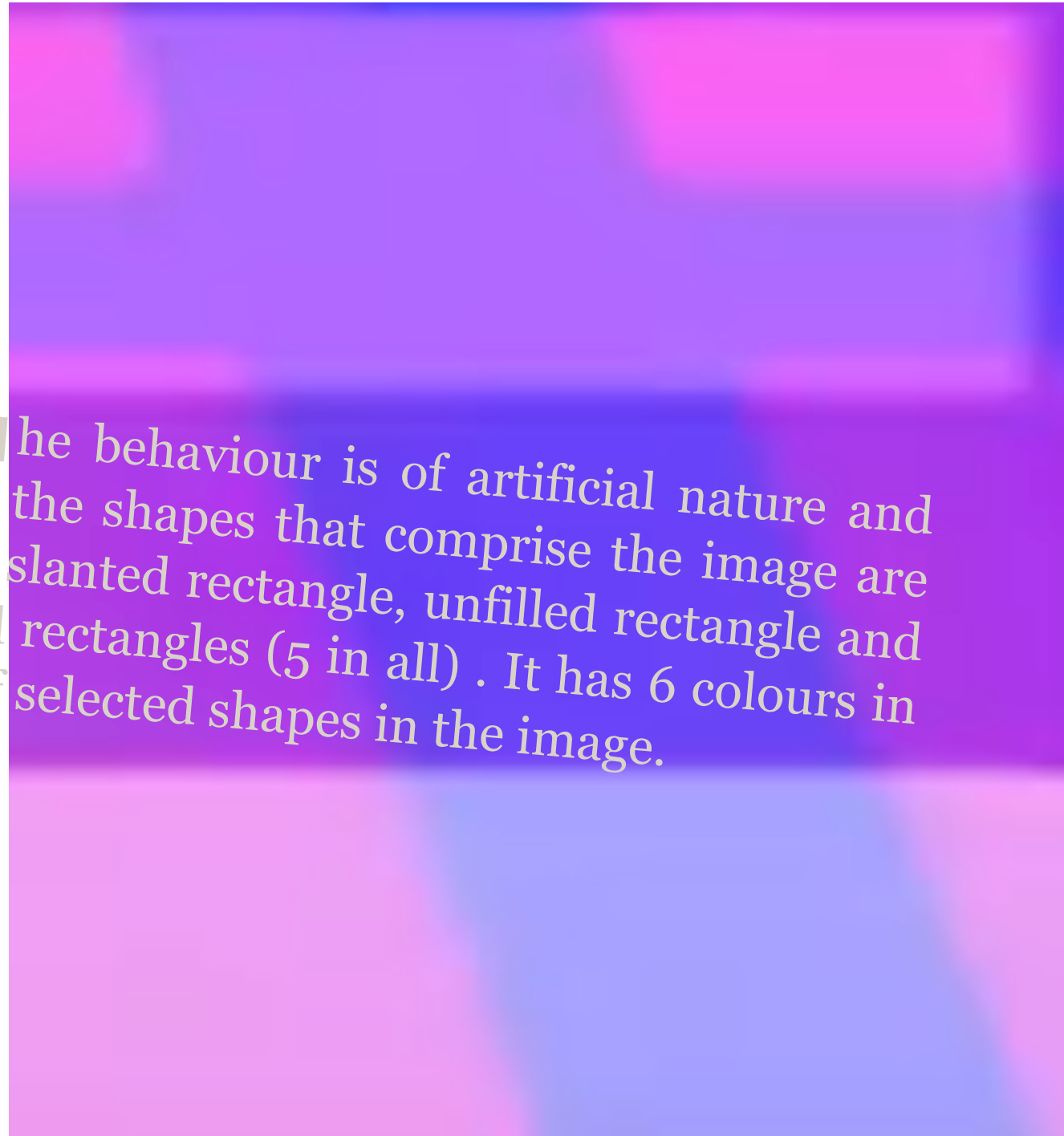
PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are slanted rectangle, unfilled rectangle and 2 filled rectangle (4 in all) . It has 4 colours in total of selected shapes in the image.

CASE 2: STRIPE 4

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are slanted rectangle, unfilled rectangle and 3 filled rectangles (5 in all) . It has 6 colours in total of selected shapes in the image.



CASE 3: STRIPE 4

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is an unfilled rectangle. It has 1 brown colour and pink background in total of selected shape in the image.

CASE 4: STRIPE 4

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is a filled rectangle (7 in all) . It has 7 colours in total of selected shapes in the image.

CASE 5: STRIPE 4

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are slanted rectangle, unfilled rectangle and 2 filled rectangle (4 in all) . It has 4 colours in total of selected shapes in the image.

CASE 6: STRIPE 4

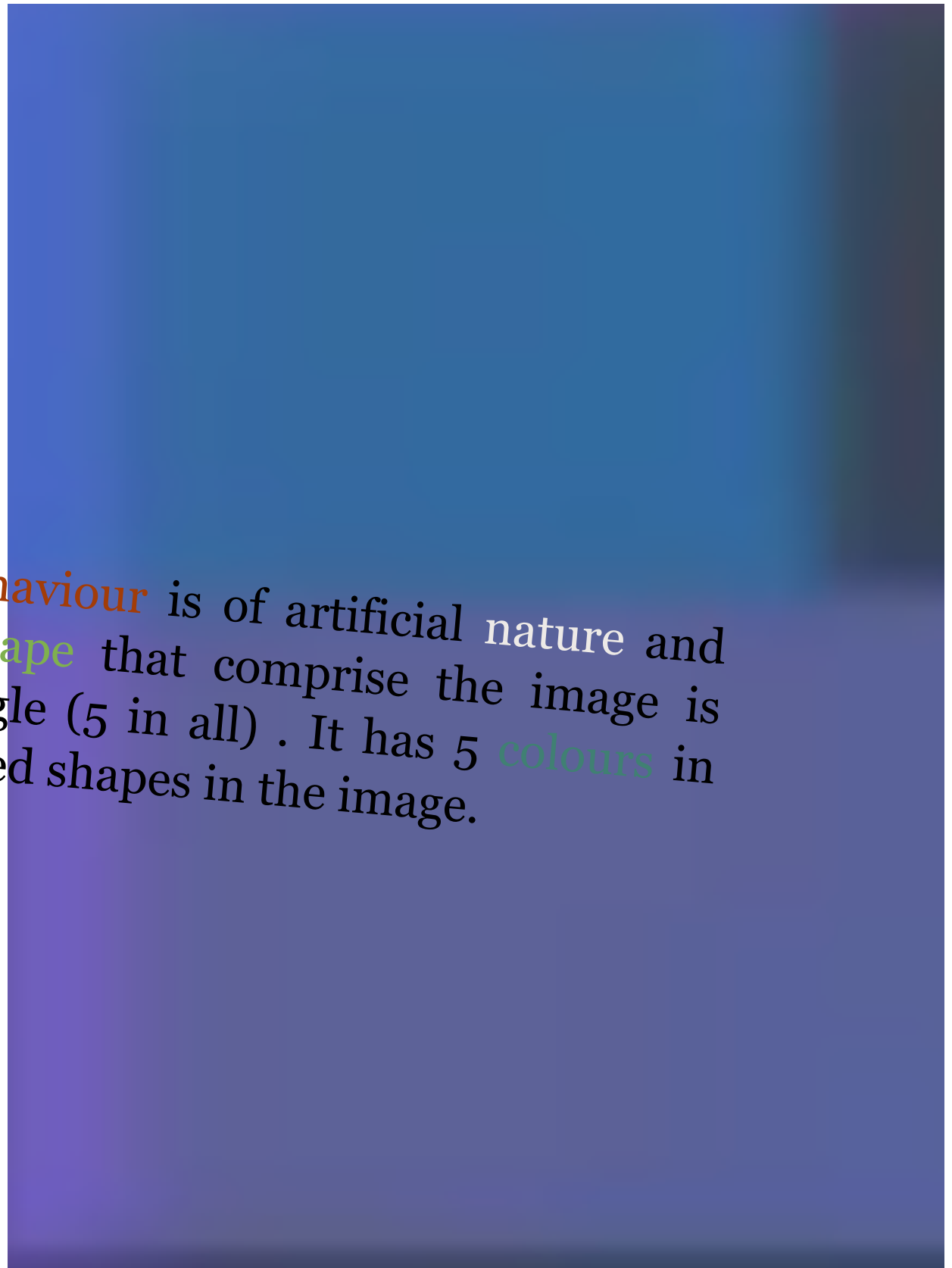
PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is filled rectangle (2 in all) . It has 2 colours in total of selected shapes in the image.

CASE 7 : STRIPE 4

PARTICIPANT IMAGE

The **behaviour** is of artificial nature and the **shape** that comprise the image is rectangle (5 in all) . It has 5 **colours** in total of selected shapes in the image.



CASE 8: STRIPE 4

PARTICIPANT IMAGE



The behaviour is of **artificial nature** and the shapes that comprise the image are **truncated** trapezium, 2 unfilled rectangle and 1 filled rectangle (4 in all) . It has 4 colours in total of selected shapes in the image.

CASE 9: STRIPE 4

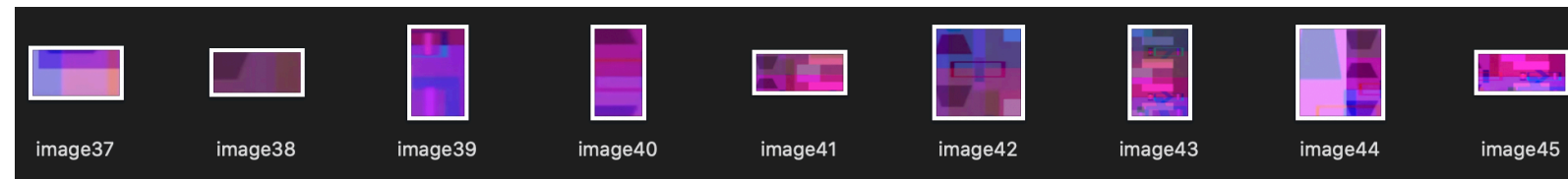
PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is a filled rectangle (6 in all) . It has 6 colours in total of selected shapes in the image.



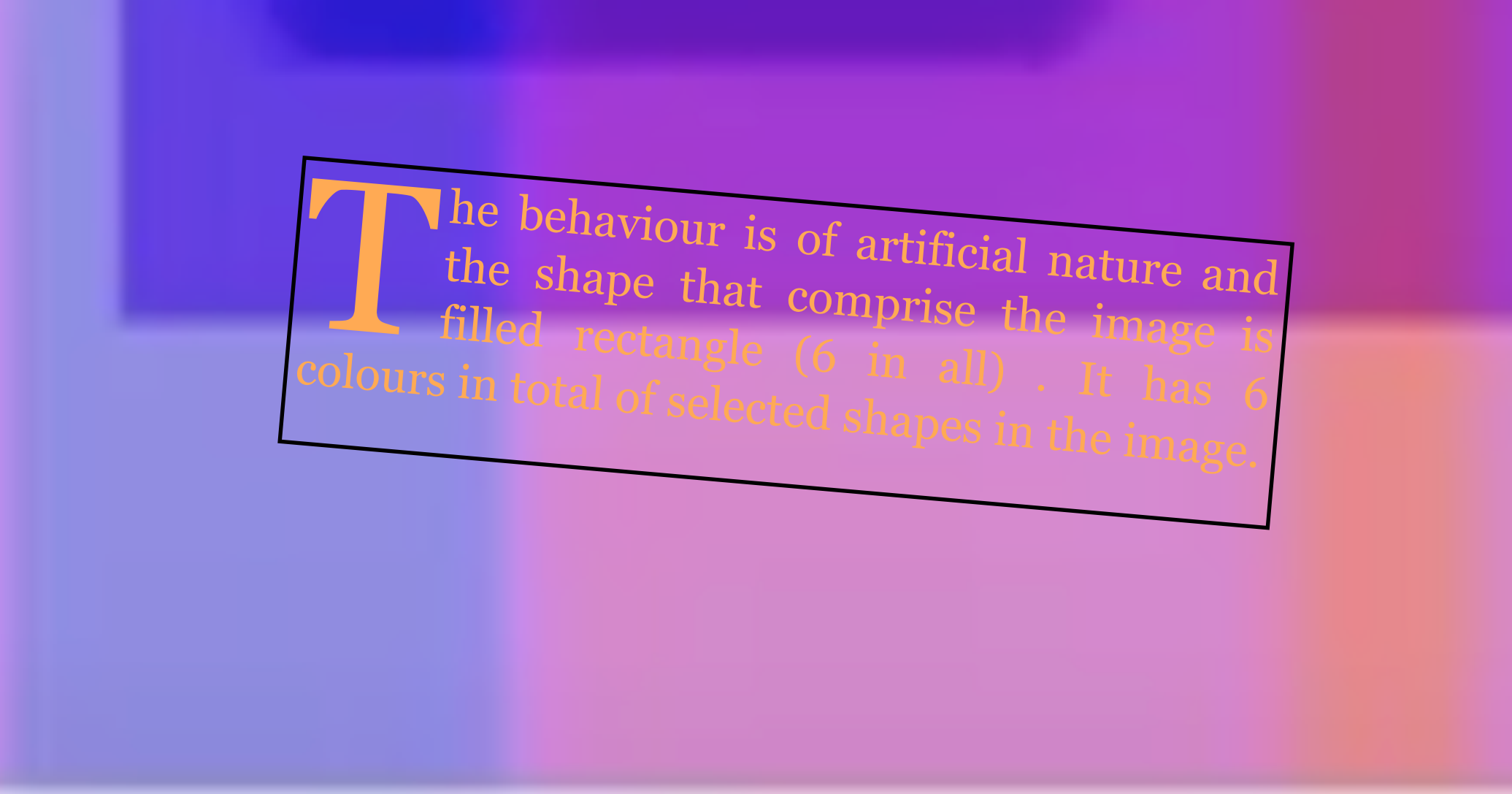
Stripe 5



There are about 9 participant images in this experimental group with its variable, 5. The case-level of participation images is from 37 to 45. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 5

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shape that comprise the image is filled rectangle (6 in all) . It has 6 colours in total of selected shapes in the image.

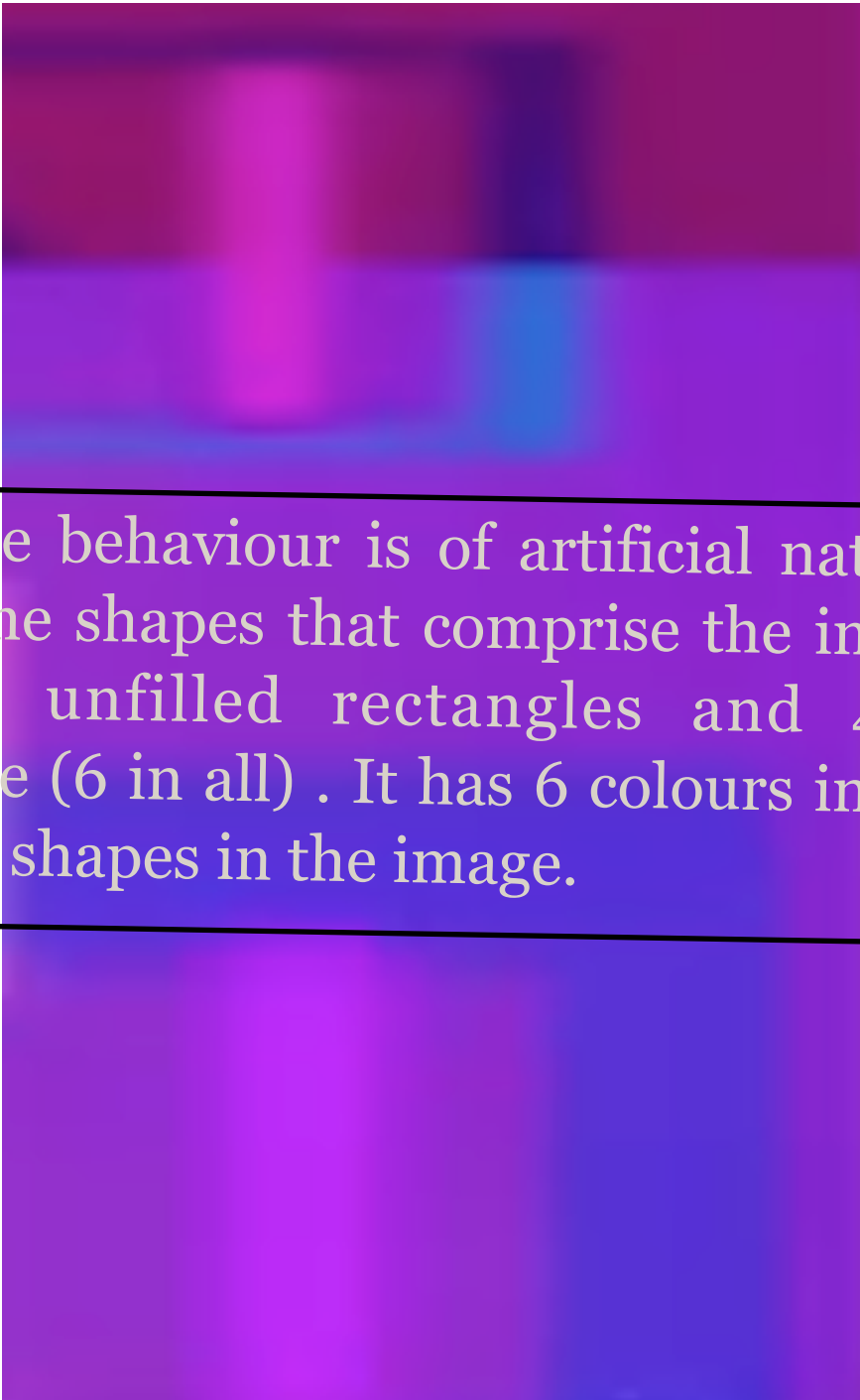
CASE 2: STRIPE 5

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is filled rectangle (3 in all) . It has 4 colours in total of selected shapes in the image.

CASE 3: STRIPE 5

PARTICIPANT IMAGE



The behaviour is of artificial nature and the shapes that comprise the image are 2 unfilled rectangles and 4 filled rectangle (6 in all) . It has 6 colours in total of selected shapes in the image.

CASE 4: STRIPE 5

PARTICIPANT IMAGE

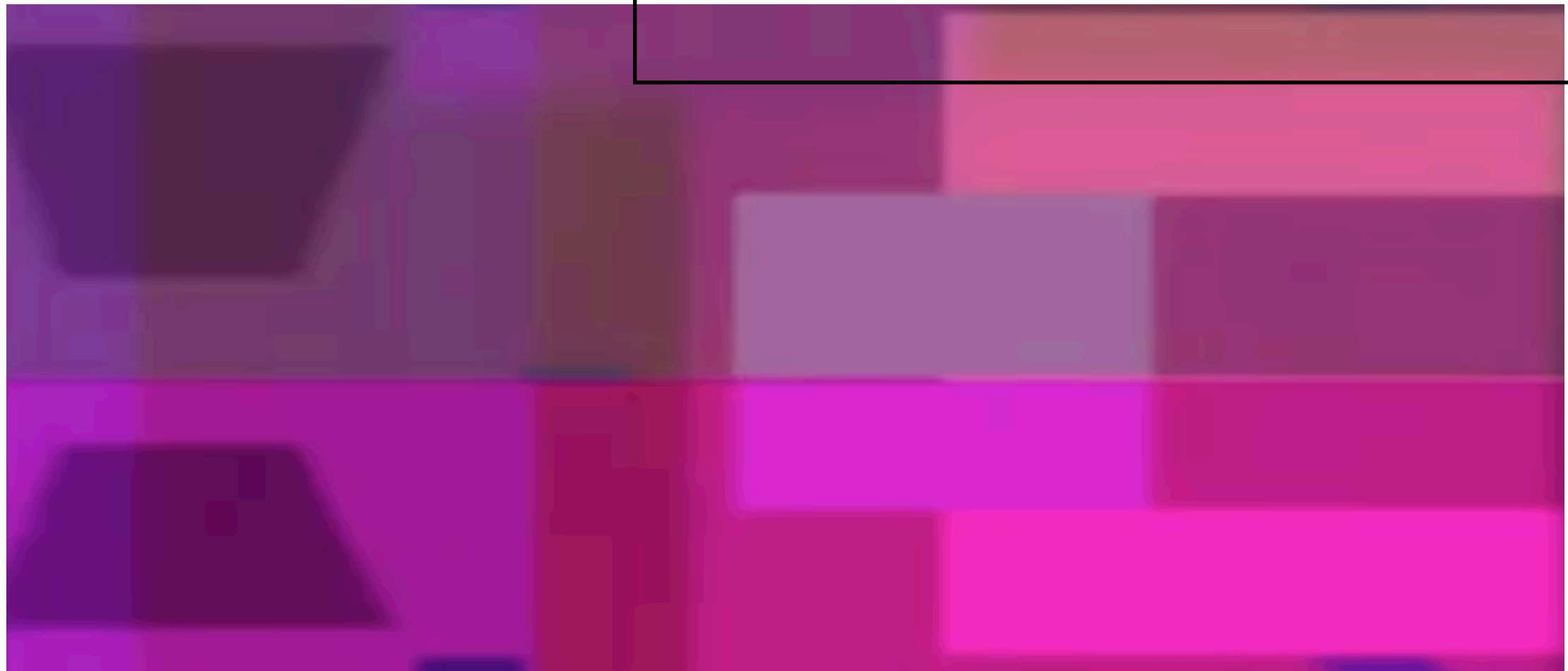
The behaviour is of artificial nature and the shapes that comprise the image are two inverted trapeziums, 1 unfilled rectangle and 3 filled rectangles(6 in all) . It has 5 colours in total of selected shapes in the image.



CASE 5: STRIPE 5

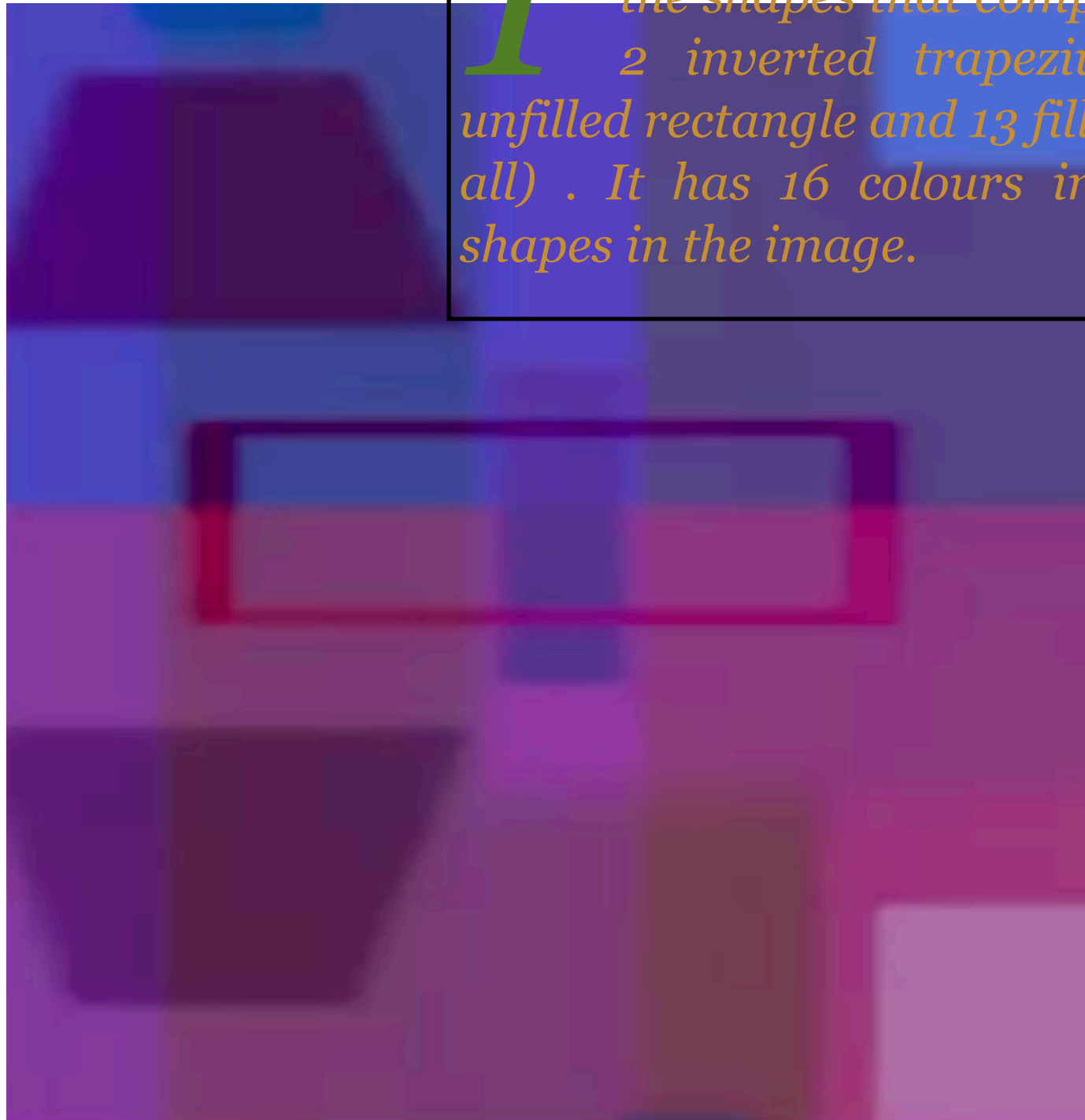
PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are 2 inverted trapeziums and 11 filled rectangles(13 in all) . It has 13 colours in total of selected shapes in the image.



CASE 6: STRIPE 5

PARTICIPANT IMAGE

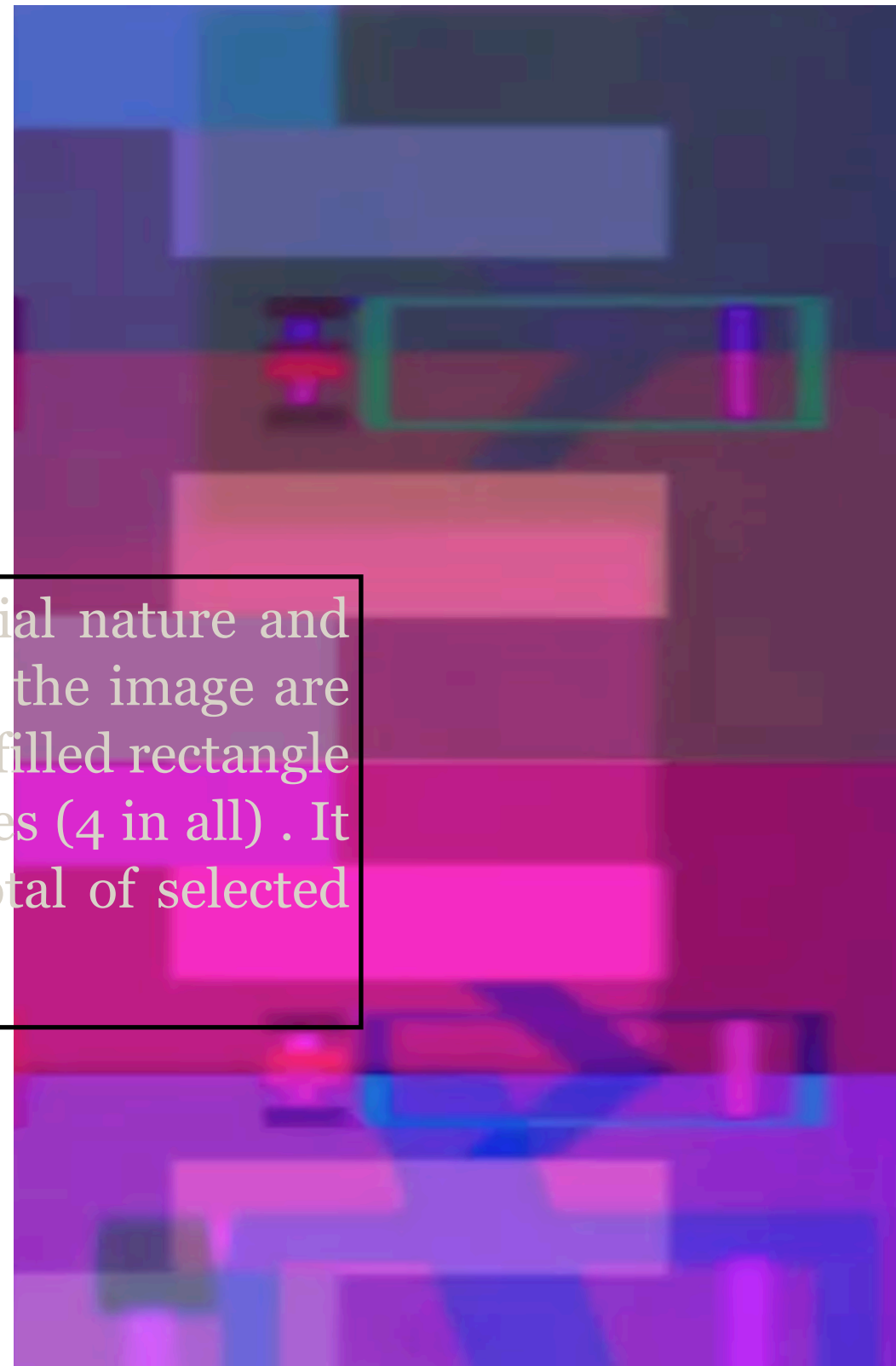


The behaviour is of artificial nature and the shapes that comprise the image are 2 inverted trapeziums, rectangle, 1 unfilled rectangle and 13 filled rectangle (16 in all) . It has 16 colours in total of selected shapes in the image.

CASE 7 : STRIPE 5

PARTICIPANT IMAGE

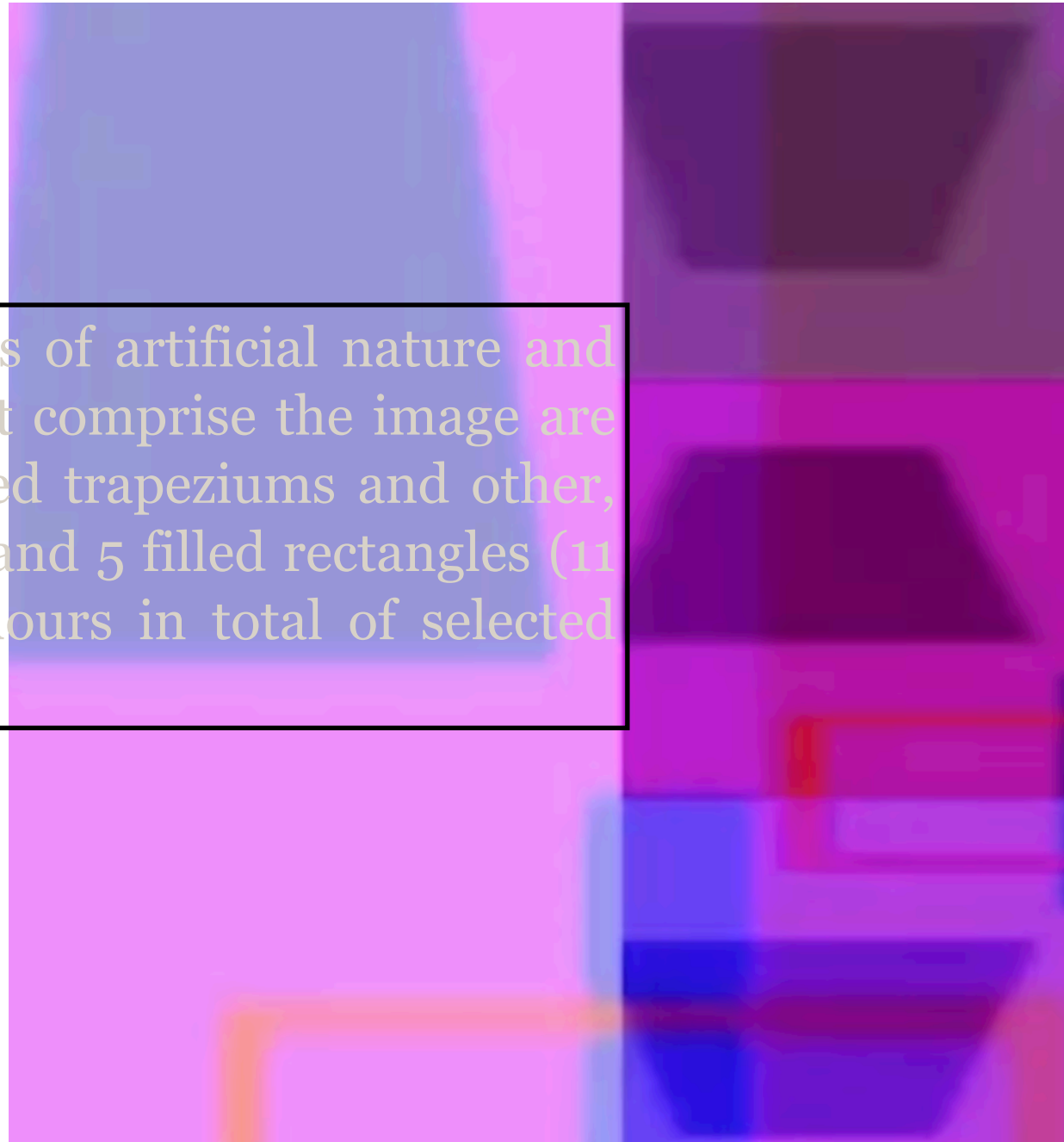
The behaviour is of artificial nature and the shapes that comprise the image are 2 slanted rectangles, 3 unfilled rectangle and more than 7 filled rectangles (4 in all) . It has MORE than 4 colours in total of selected shapes in the image.



CASE 8: STRIPE 5

PARTICIPANT IMAGE

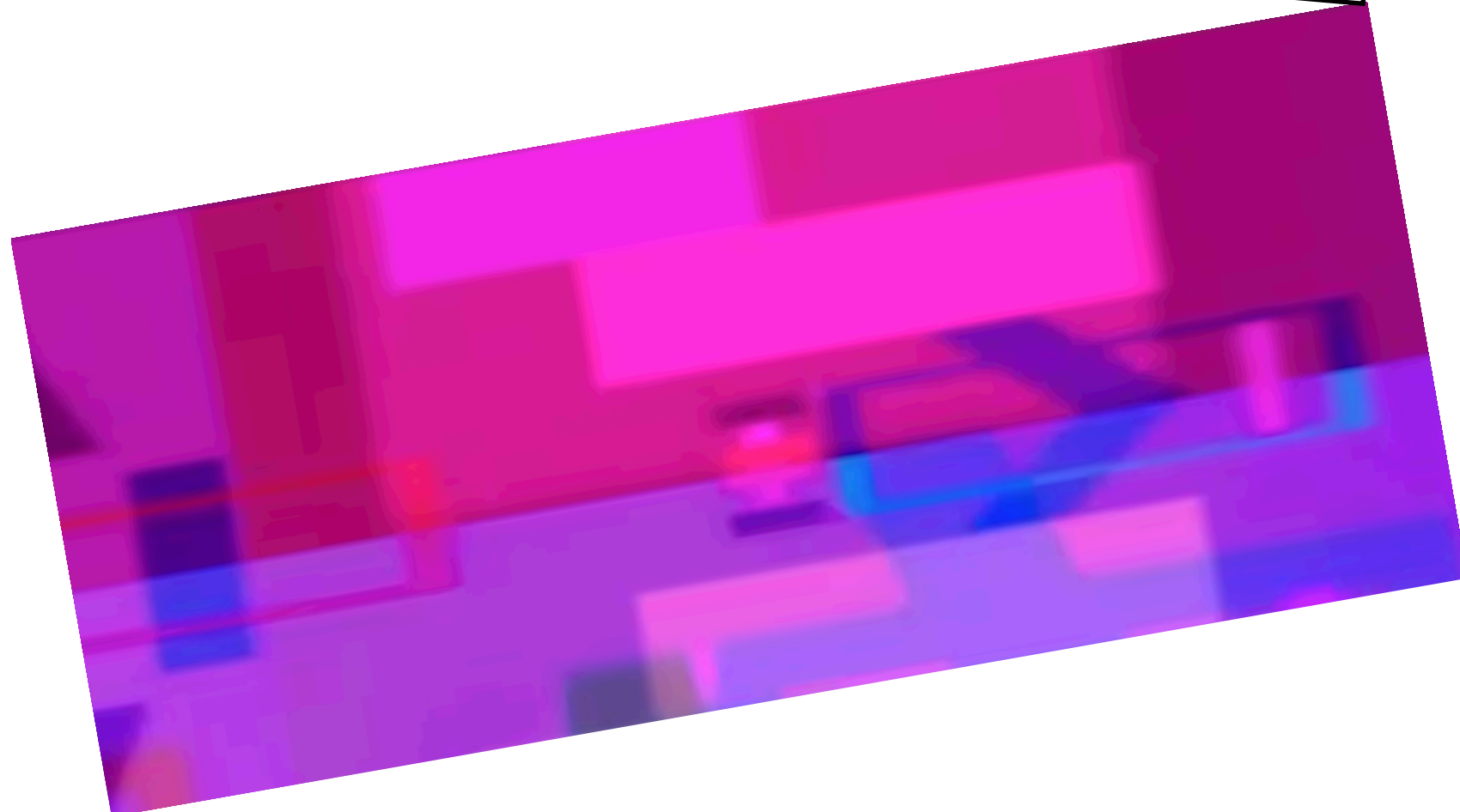
The behaviour is of artificial nature and the shapes that comprise the image are 3 invert-chained trapeziums and other, 2 unfilled rectangles and 5 filled rectangles (11 in all) . It has 11 colours in total of selected shapes in the image.



CASE 9: STRIPE 5

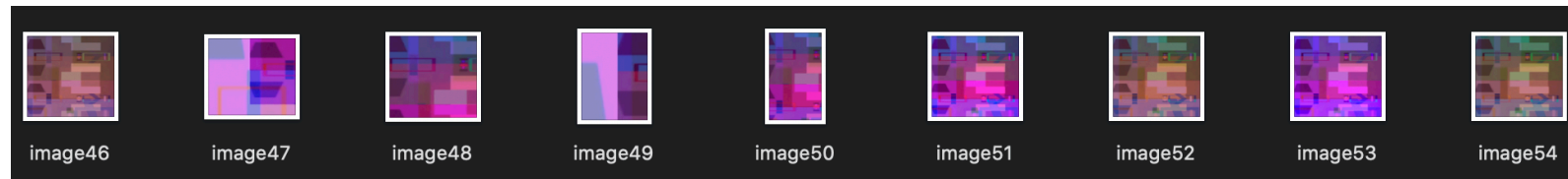
PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are 3 trapezoids, slanted rectangle, 3 unfilled rectangles, greater-than symbol and 10 filled rectangles (18 in all) . It has 12 colours in total of selected shapes in the image.





Stripe 6

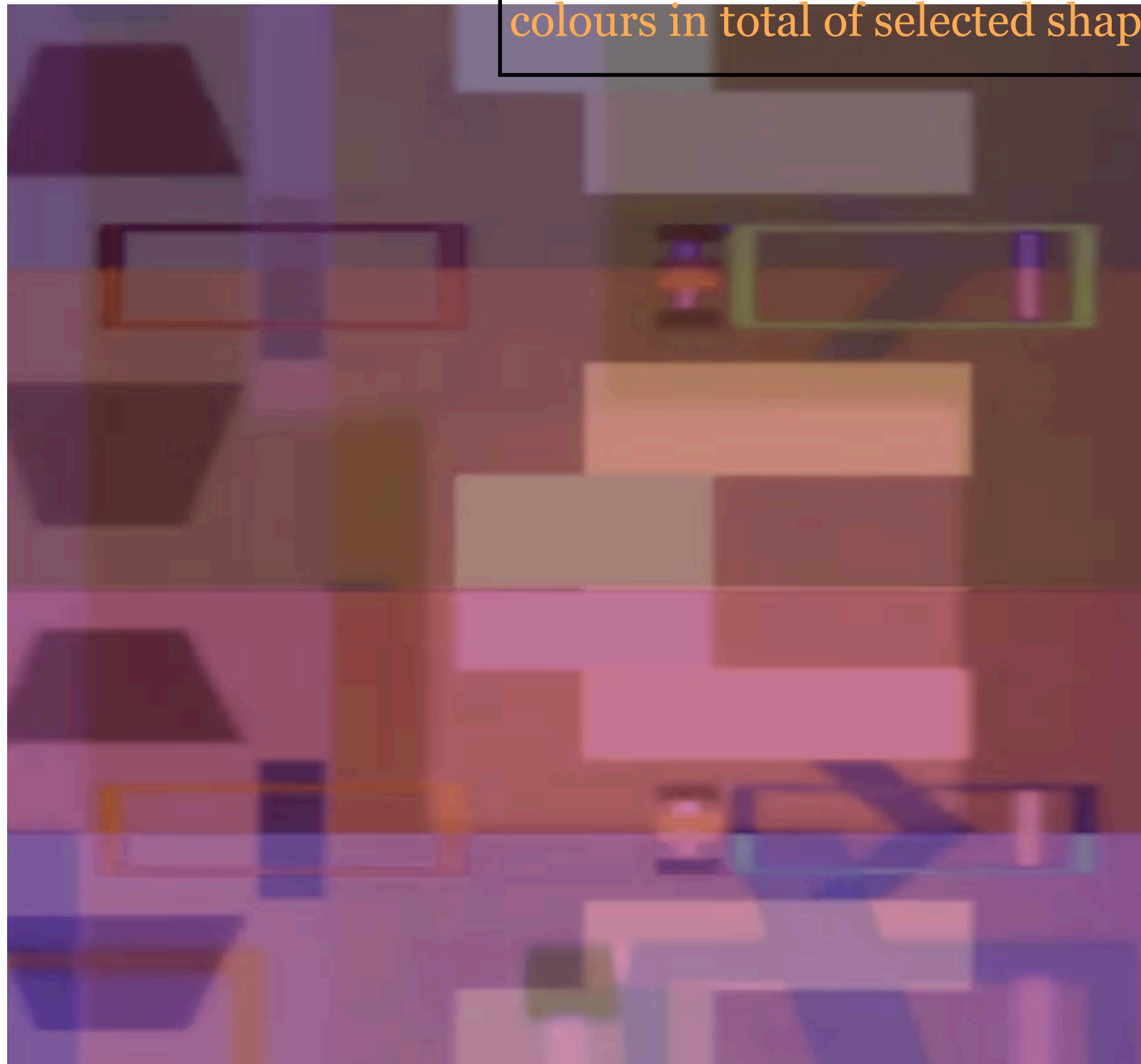


There are about 9 participant images in this experimental group with its variable, 6. The case-level of participation images is from 46 to 54. The control group has 53 un-participant images that are not selected.

CASE 1: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are four trapeziums, 2 slanted rectangles, 1 greater-than symbol, 5 unfilled rectangles and more filled rectangles. It has more than 12 colours in total of selected shapes in the image.



CASE 2: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are three inverted trapeziums, two unfilled rectangles and seven filled rectangles (12 in all). It has 12 colours in total of selected shapes in the image.



CASE 3: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are trapezium, rectangles (both filled and unfilled). It has more than 6 colours in total of selected shapes in the image.



CASE 4: STRIPE 6

PARTICIPANT IMAGE

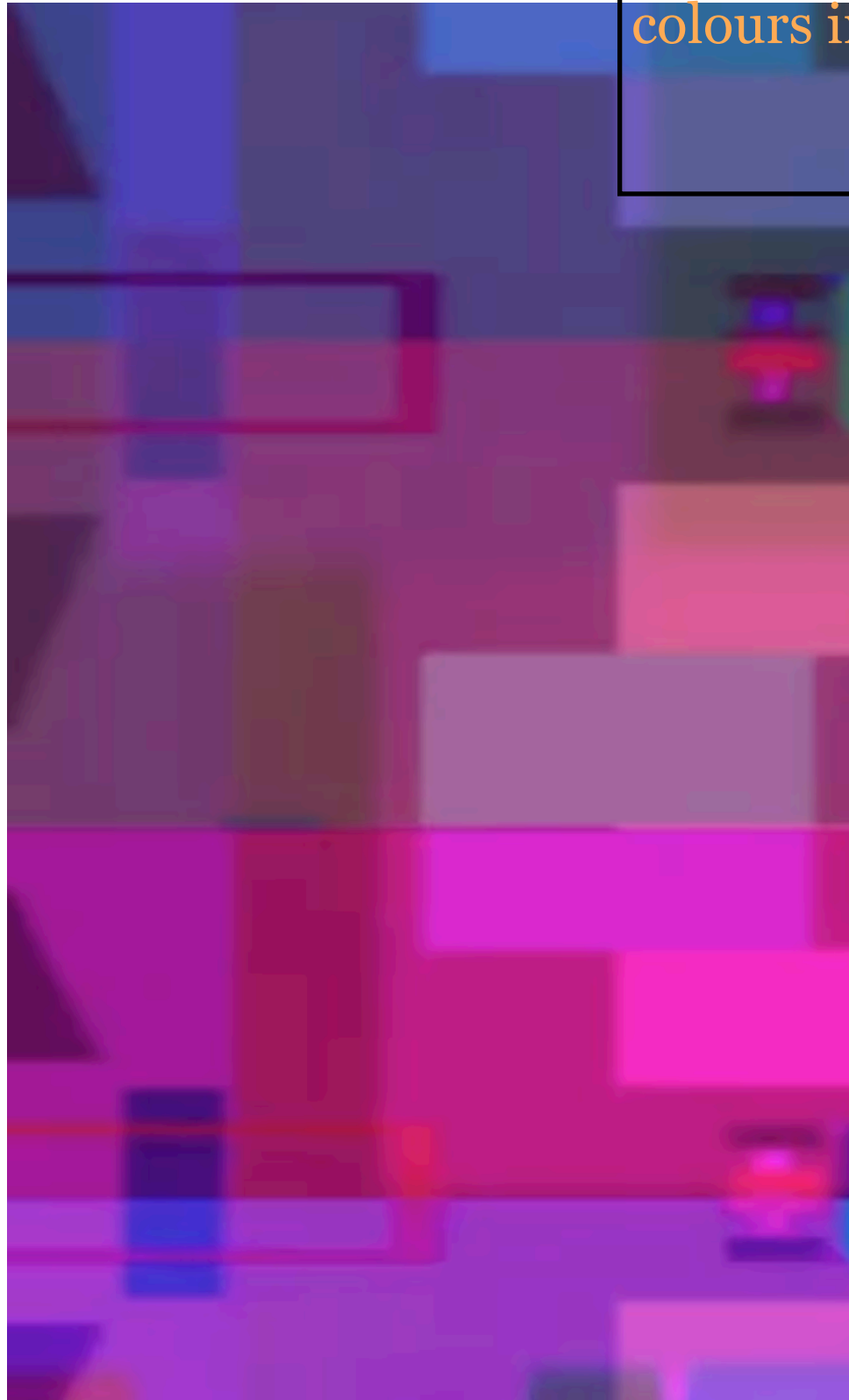
The behaviour is of artificial nature and the shapes that comprise the image are 3 truncated trapeziums and 6 rectangles:filled and filled (9 in all) . It has 10 colours in total of selected shapes in the image.



CASE 5: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are truncated trapeziums and both filled and unfilled rectangles. It has more than 6 colours in total of selected shapes in the image.



CASE 6: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are 4 trapeziums and more than 10 unfilled/filled rectangles. It has more than 10 colours in total of selected shapes in the image.



CASE 7: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are similar to case 6:stripe 6 but different colour adjustment is applied.



CASE 8: STRIPE 6

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are similar to case 7:stripe 6 but different colour adjustment is applied.



CASE 9: STRIPE 6

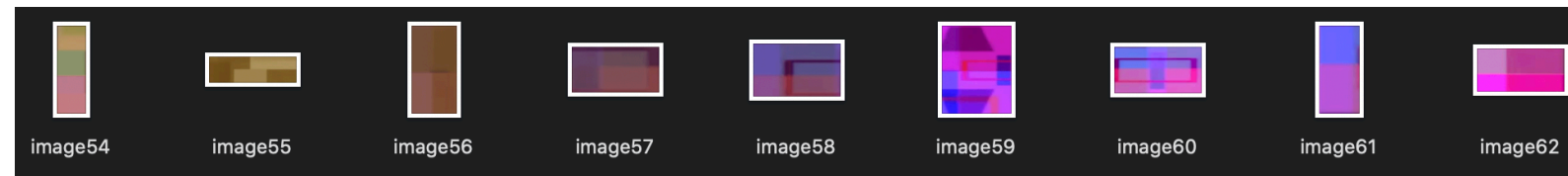
PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are similar to case 8:stripe 6 but different colour adjustment is applied.





Stripe 7

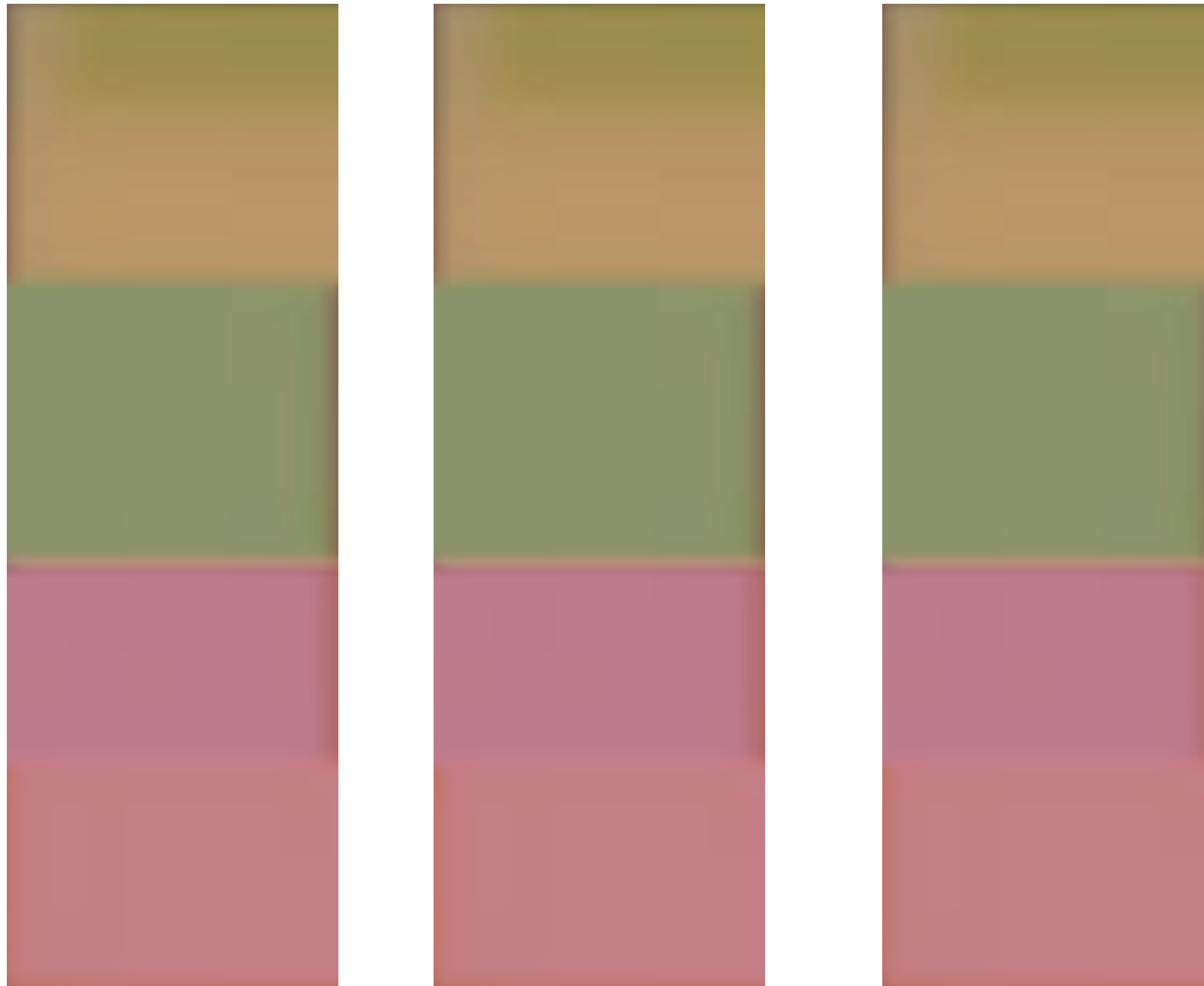


There are about 9 participant images in this experimental group with its variable, 7. The case-level of participation images is from 55 to 62. The control group has 53 un-participant images that are not selected. It uses several image identity in proximity.

CASE 1: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle of three colour variations.



CASE 2: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shapes that comprise the image are 5 rectangles of five colour variations.



CASE 3: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle (4 in number) of four colour variations.



CASE 4: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle (4 in number) of four colour variations.



CASE 5: STRIPE 7

PARTICIPANT IMAGE

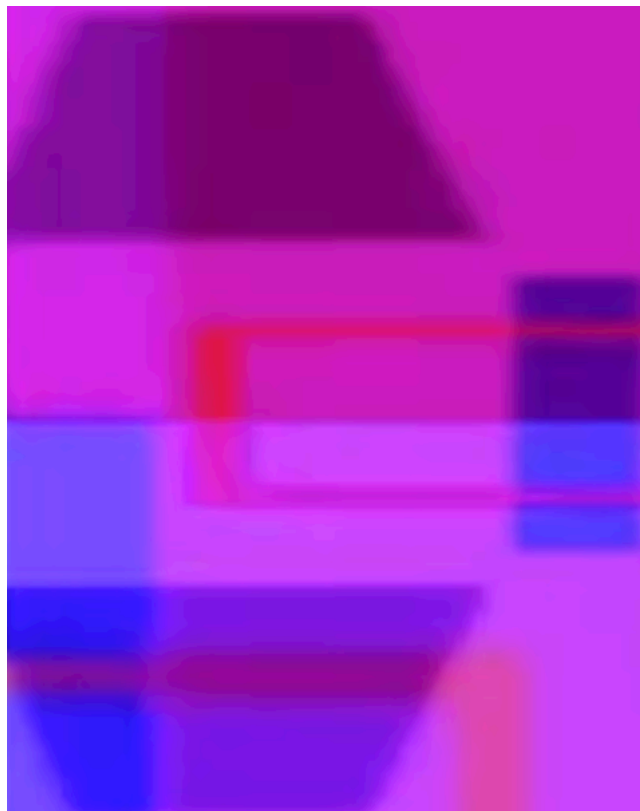
The behaviour is of artificial nature and the shape that comprise the image is rectangle (5 in number) of five colour variations.



CASE 6: STRIPE 7

PARTICIPANT IMAGE

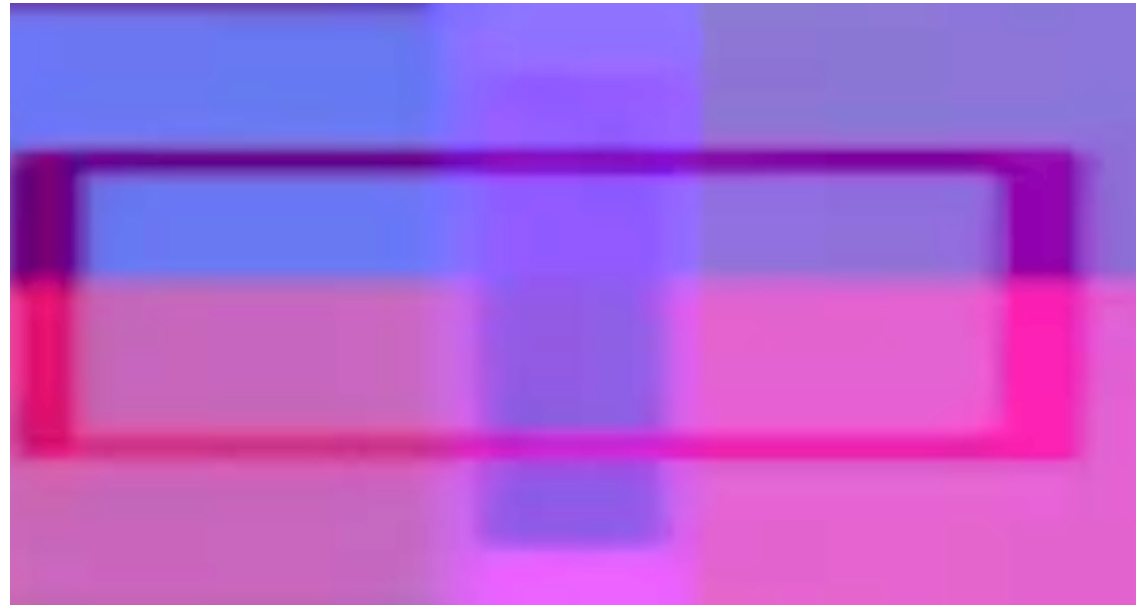
The behaviour is of artificial nature and the shapes that comprise the image are two trapeziums and rectangle (7 in number) of seven colour variations.



CASE 7: STRIPE 7

PARTICIPANT IMAGE

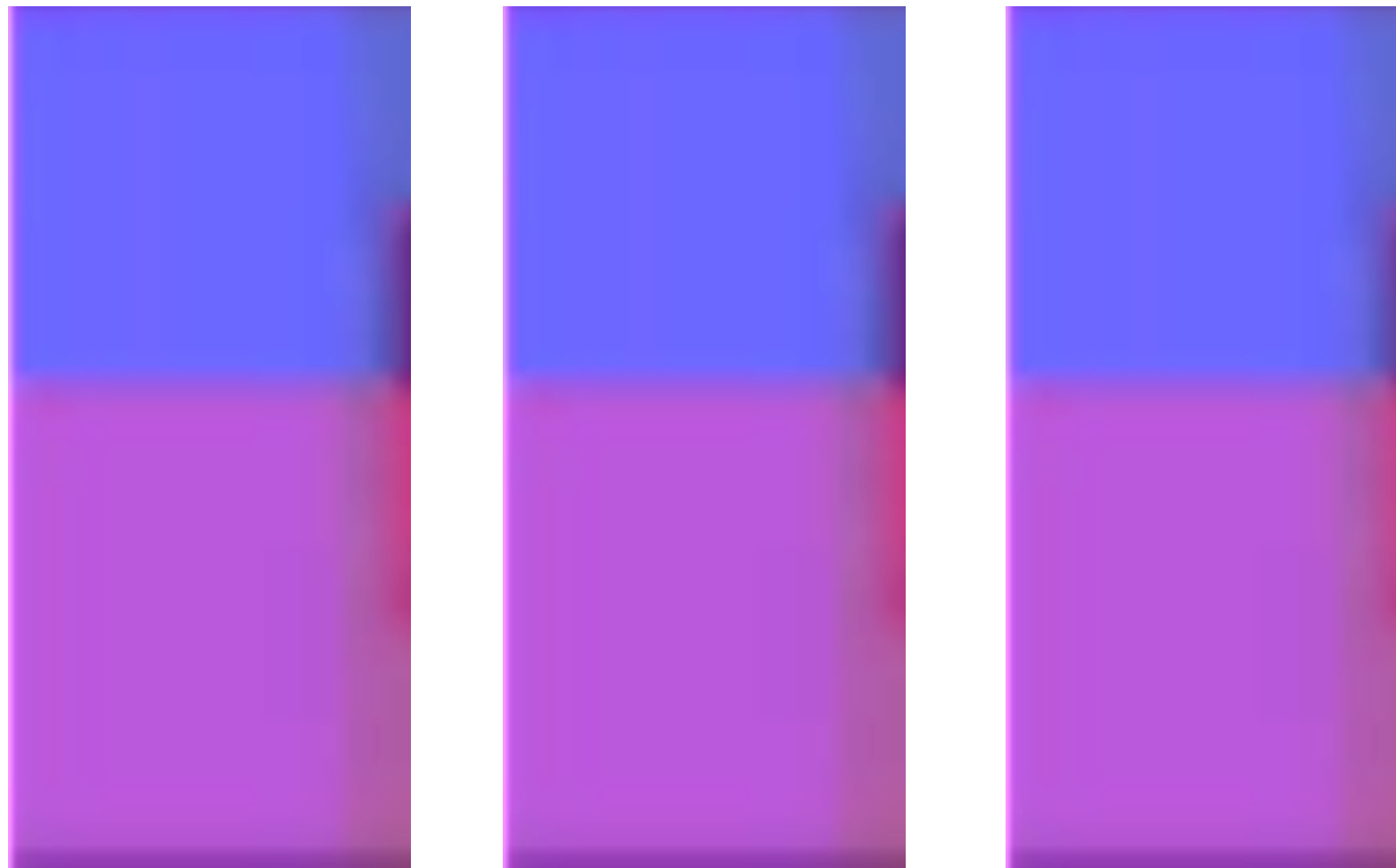
The behaviour is of artificial nature and the shapes that comprise the image is rectangle (7 in number) of seven colour variations.



CASE 8: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle(2 in number) of two colour variations.



CASE 9: STRIPE 7

PARTICIPANT IMAGE

The behaviour is of artificial nature and the shape that comprise the image is rectangle (4 in number) of four colour variations.



REFERENCES:

- (1) Visual Perception of Shapes, Frank Appiah, King's Fellow work. 2021/22. 45pp.
- (2) The Process of Research Psychology, Dawn M. McBride, Illinois State University, Sage Publishing, 2010.



Conclusion.

This research study started with hypothesis along with the main hypothesis and theory-driven hypothesis. Then to degree of internal validity and systematic observation. We look at research design process, operational definition and further exploration of experiments. 7 variables of each with 9 participant images are used in the experimental groupings and a variable 53 un-participant images under control groupings.